separating oxygen (O_2) from the heated pressurized air and mixing the O_2 with the recirculated CO_2 and fuel;

burning, by the combustion unit, the mixture of O_2, CO_2 and fuel in flamelets extending between the longitudinal air tubes, and generating combustion products;

exhausting the pressurized air into a heat exchange tube in the preheating unit;

transporting the combustion products to a gas power turbine;

generating electrical power by expanding the combustion products into the gas power turbine;

exhausting the combustion products from the gas power turbine;

condensing, by a condenser, the exhausted combustion products to separate water and CO_2;

splitting, by a splitter, the CO_2 into a first portion and a second portion;

sequestering, in a CO_2 storage location, the first portion;

receiving, by an oxygen depleted air pressure recovery turbine, oxygen depleted pressurized air from the heat exchange tube;

rotating a shaft of the oxygen depleted air pressure recovery turbine by expanding the oxygen depleted pressurized air;

rotating, by the shaft of the oxygen depleted air pressure recovery turbine, a recirculated CO_2 compressor;

compressing, by the recirculated CO_2 compressor, the second portion of the CO_2;

transporting the second portion to the preheating unit;

adjusting, by a computer operatively connected to the main air compressor, the power turbine, the condenser, the splitter, the recirculated CO_2 compressor and the oxygen depleted air recovery turbine, a speed of the main air compressor, operating conditions of the power turbine, the condenser, the recirculated CO_2 compressor and the depleted air recovery turbine and a ratio of the first and second portions;

generating, by at least one thermocouple in the combustor, a temperature signal when the temperature of the air in the air tubes is greater than a threshold;

receiving, by the computer, the temperature signal;

igniting, by a signal generated by the computer operatively connected to at least one igniter, the at least one igniter,

generating, by a power meter connected to the main turbine, power measurement signals;

generating, by a CO_2 meter connected to the second port of the splitter, CO_2 measurement signals;

receiving, by the computer, the power and CO_2 measurement signals;

wherein the computer is operatively connected to the main air compressor, the power turbine, the condenser, the splitter, the recirculated CO_2 compressor and the depleted air recovery turbine, the computer including a controller having circuitry and a processor having program instructions configured to instruct a processor for:

adjusting a speed of the main compressor;

adjusting operating conditions of the power turbine, the condenser, the recirculated CO2 compressor and the depleted air recovery turbine;

adjusting a ratio of the first and second portions; and

generating clean power without adding CO_2 to the surrounding environment.

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